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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,444	04/23/2002	Yasuji Hiramatsu	217827US2PCT	4246
22850	7590	06/08/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			FASTOVSKY, LEONID M	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/019,444

**Applicant(s)**

HIRAMATSU ET AL.

**Examiner**

Leonid M Fastovsky

**Art Unit**

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20040308, 20040324</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13,14, 20, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al (6,635,853).

Saito teaches a hot plate unit 1 (Fig. 1-9) comprising a supporting case 2 made out of metal (col. 3, lines 1-3) having inherently a thickness of 50 mm or less and including a bottom, a ceramic substrate 9, a resistance heating element 10 provided on the surface of the substrate 9, and a coolant introducing pipe 17 or 18 disposed at the bottom of the supporting case 2, and wherein plural openings 5, 17 and 18 are formed at the bottom of the supporting case 2.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Sugaya et al (6,518,548).

Saito teaches substantially the claimed invention, but does not teach a thermocouple.

Sugaya discloses a thermocouple 15. It would have been obvious to one having ordinary skill in the art to include a thermocouple in Saito's invention in order to provide a substrate temperature control system capable of unifying the temperature of the substrate as taught by Sugaya (Abstract, lines 1-3).

6. Claims 15 –16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito.

Saito teaches substantially the claimed invention including a thickness of the ceramic plate in a range from 1 to 10 mm (col. 3, lines 26-30), but is silent regarding a thickness of the case. It would have been obvious to one having ordinary skill in the art to modify Saito's invention to have the ration of thickness of the ceramic 9 to the thickness of the case 9 in a range that satisfies  $0.02 \leq 1/L$  or  $1/L \leq 10$  in order to be adaptable for quick and forcible cooling.

7. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Schaper et al (6,359,264).

Saito teaches substantially the claimed invention, but is silent regarding a diameter of the ceramic substrate and an operating temperature of the hot plate. Schaper discloses a ceramic substrate having from 200 to 300 mm diameter and an operating temperature

from 70 to 250 degree C (col. 3, lines 60-67, col. 4, lines 1-5). It would have been obvious to one having ordinary skill in the art to modify Saito's invention to include a ceramic substrate having a diameter 300 mm or more and an operating temperature of 150 degree C or more in order to heat a ceramic substrate rapidly and uniformly as taught by Schaper (col. 3, lines 65-67).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Kallgren (5,973,298).

Saito teaches substantially the claimed invention, but does not teach that the ceramic substrate comprises an aluminum nitride. Kallgren discloses a ceramic substrate 12 comprising an aluminum nitride (col.2, lines 31-50). It would have been obvious to one having ordinary skill in the art to modify Saito's invention to include an aluminum nitride in the ceramic substrate in order to have a thermal shock resistant and a low thermal conductivity as taught by Kallgren (col. 3, lines 41-45)

### ***Response to Arguments***

9. Applicant's arguments with respect to claim 1-3, 5-7 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5981913 (cooling), 6399926 (temperature sensor), 6228171 (hot plate), 6229116 (hot plate).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 703-306-5482. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Leonid M Fastovsky  
Examiner  
Art Unit 3742

Imf